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SMD Operations Procedures Manual

8.1.1.44 GENERIC LOTO PROCEDURE INCORPORATING UPA-100 LED METER AND AC PANEL METERS

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Hand Processed Changes

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Division Head

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8.1.1.44 GENERIC LOTO PROCEDURE INCORPORATING UPA-100 LED METER AND AC PANEL METERS

1.0 Purpose and Scope

- 1.1 The purpose of this Procedure is to provide instruction in the zero voltage verification for LOTO on the various Power Supply Systems utilized by the Superconducting Magnet Division. This applies only to those systems that have a UPA-100 LED meter along with three AC panel meters installed on the equipments 480V AC disconnect switch.
- 1.2 The procedure is to be used by electrical workers who are authorized to perform LOTO on the various systems.

2.0 Responsibilities

- 2.1 Only authorized personnel with the proper training on each system will perform the procedure.

3.0 Prerequisites

3.1 Training

- 3.1.1 Workers must be “Authorized employee” as defined by ES&H Standard 1.5.1, “Lockout/Tagout Requirements”.
- 3.1.2 Personnel must be trained in NFPA 70E Personnel Protective Equipment Requirements and Arc Flash Hazards.
- 3.1.3 Worker LOTO OJT Training on Power Supply Systems must be up to date.

4.0 Precautions

- 4.1 Under normal conditions the zero voltage verification of LOTO on a 480V Power Supply System is a **Hazard Category 2**, as per NFPA 70E Standard for Electrical Safety in the Workplace. Only with the installation of the UPA-100 and AC meters along with their verification of operation allows reduction of the Hazard Category to **-1**.
- 4.2 Proper PPE must be worn as per NFPA 70E Hazard Category. In this case Hazard Category is **-1**.

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- 4.3 If worker cannot witness change of state of meters and UPA-100 LED's, zero voltage verification remains **Hazard Category 2**. PPE for this category must be worn.

5.0 Procedure

- 5.1 If initial condition of Power Supply System is De-energized, verification of the operation of the UPA-100 and AC Panel meters is required by re-energizing power supply. Meter system is mounted on the 480V Disconnect Switch.
- 5.2 Energize the 480V disconnect switch and check that each AC meter is reading 277 VAC to ground and the LED's on the UPA-100 are registering voltage (LED Lights Blinking).
- 5.3 If initial condition of Power Supply is already energized verify proper operation of meters and LED's as in step 5.2.
- 5.4 De-energize Power Supply by throwing Main 480 V Disconnect Switch.
- 5.5 Verify that all three AC panel meters change to 0 Volts and the UPA-100 LED's go out.
- 5.6 Try to turn the Power Supply ON using local controls.
- 5.7 Perform Lockout/Tagout on the 480V Disconnect switch as per ES&H Standard 1.5.1.
- 5.8 Verify LOTO using a category III or IV Meter (ie: Fluke T-3) and the proper PPE required as per NFPA 70E. Note that Hazard Category is now (-1).

6.0 References

- 6.1 ES&H Standard 1.5.1 "Lockout/Tagout Requirements"
- 6.2 System Specific SMD LOTO OJT Training.
- 6.3 NFPA 70E Standard for Electrical Safety in the Workplace.